

CCCGGGCCCCGGCCCGCTCGCGGGACCCCGTGCCCGGCCGCGTCGCCACCGCCGCCCCGGCCGACCGAG
 GGACCCGCCCCGCGCGGCTGCTCCGGACCTAGAGGATCAAGTCATAATGGGAGCATTTTTAGACAAGCC
 AAAGATGGAGAAGCATAATGCCCAGGGGCAGGGGAATGGGTACGATACGGCCTAAGCAGCATGCAAGGT
 TGGCGAGTTGAAATGGAGGACGCACACACGGCTGTGATCGGTTTGCCAAGTGGACTTGAGACATGGTCAT
 TCTTTGCTGTATATGATGGGCATGCTGGTTCTCAGGTTGCCAAATACTGCTGTGAGCACTTGTTAGATCA
 CATCACCAATAACCAGGATTTAGAGGATCTGCAGGAGCACCTTCTGTGGAGAACGTAAAGAATGGAATC
 AGAACAGGGTTTCTGGAGATTGATGAACACATGAGAGTTATGTCAGAGAAGAAACATGGTGCAGATAGAA
 GCGGGTCAACAGCTGTGGGCGTCTTAATCTCTCCCAACATACTTATTTTATTAACTGTGGAGACTCGAG
 AGGTTTACTTTGTAGGAATAGAAAAGTTCACCTTCTTACACAAGACCATAAACCAAGTAACCCGCTGGAA
 AAAGAACGAATTCAGAATGCAGGGGGCTCGGTGATGATTAGCGTGTCAATGGCTCTCTGGCTGTATCGA
 GGGCCCTTGGGGATTTGATTACAAATGTGTCCATGGAAAAGGTCCACAGAGCAGCTTGTCTCCCCAGA
 GCCCGAAGTCCATGATATTGAAAGGTCTGAAGAAGATGACCAGTTCATCATCCTTGCATGCGATGGCATC
 TGGGACGTCATGGGGAACGAAGAGCTCTGTGACTTTGTGAGATCCAGACTTGAAGTCACTGATGACCTTG
 AGAAAGTTTGCAATGAAGTAGTCGACACCTGCTTGTATAAGGGAAGTCGAGACAACATGAGTGTGATTTT
 GATCTGTTTTTCCAAGTGCACCCAAAGTCTCGGCAGAGGCGGTGAAGAAGGAGGCGGAGCTGGACAAGTAC
 CTGGAGAGCAGAGTAGAAGAAATCATAAAGAAGCAGGTGGAAGGCGTCCCTGACTTAGTCCACGTGATGC
 GCACGTTAGCCAGTGAGAACATCCCCAGCCTCCCACCAGGGGGTGAATTGGCAAGCAAGCGGAATGTAAT
 TGAAGCCGTTTACAATAGACTGAACCCTTACAAAAATGACGACACTGATTCTGCGTCAACCGATGATATG
 TGGTAAAGCCGCTACCCAGCCGTGGACTCACCTTCGCTGCAAAGGGGAAGCCAGCTCATCCTTGCCGA
 GCCTTTACCATCCATCACCGACTTCACAGGAGGTCTGACACGGGTGAGGACTGCAG (SEQ NO:1)

MGAFLDKPKMEKHNAQQQGNGLRYGLSSMQGWRVEMEDAHTAVIGLPSGLETW
 SFFAVYDGHAGSQVAKYCCEHLLDHITNNQDFRGSAGAPSVENVKNGIRTGFLEID
 EHMVRVMSEKKHGADRSGSTAVGVLPQHTYFINCGRGLLCRNKRVHFFTQDH
 KPSNPLEKERIQNAGGSVMIQRVNGSLAVSRALGDFDYKCVHKGKPTQLVSPEPE
 VHDIERSEDDQFIILACDGIWDVMGNEELCDFVRSRLEVTDLEKVCNEVVDTCLE
 YKGSRDNMSVILICFPSAPKVSAAVKKEAELDKYLESRVEEIIKKQVEGVPDLVH
 VMRTLASENIPSLPPGGELASKRNVIEAVYNRLNPYKNDDTDSASTDDMW (SEQ
 ID NO:2)

FIGURE 1

underlined = deleted in targeting construct

[] = sequence flanking Neo insert in targeting construct

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CCCCGGCCCCGGCCCGCTCGCGGGACCCCGTGCCCGGCCGCCGTCGCCACCGCCGCCCG
GCCGACCGAGGGACCCGCCCCCGCGGCTGCTCCGG [ACCTAGAGGATCAAGTCATAATG
GGAGCATTTTTAGACAAGCCAAAGATGGAGAAGCATAATGCCC] AGGGGCAGGGGAATGGG
TTACGATACGGCCTAAGCAGCATGCAAGGTTGGCGAGTTGAAATGGAGGACGCACACACG
GCTGTGATCGGTTTGCCAAGTGGACTTGAGACATGGTCATTCTTTGCTGTATATGATGGG
CATGCTGGTTCTCAGGTTGCCAATA [CTGCTGTGAGCACTTGTTAGATCACATCACCAAT
AACCAGGATTTTCAGAGGATCTGCAGGAGCACCTTCTGTGAGAACGTAAAGAATGGAATC
AGAACAGGGTTTCTGGAGATTGATGAACACATGAGAGTTATGTCAGAGAAGAAACATGGT
GCAGATAGAAGCGGTCAACAGCTGTGGGCGTCTTAATCTCTCCCCAACATACTTATTTTC
ATTAAGTGTGGAGACTCGAGAGGTTTACTTTGTAGGAATAGAAAAGTTCACTTCTTCACA
CAAGACCATAAACCAAGTAACCCGCTGGAAAAAGAACGAATTCAGAATGCAGGGGGCTCG
GTGATGATTCAGCGTGTCAATGGCTCTCTGGCTGTATCGAGGGCCCTTGGGGATTTTCGAT
TACAAATGTGTCCATGG] AAAAGGTCCACAGAGCAGCTTGTCTCCCCAGAGCCCGAAGTC
CATGATATTGAAAGGTCCTGAAGAAGATGACCAGTTCATCATCCTTGATGCGATGGCATC
TGGGACGTCATGGGGAACGAAGAGCTCTGTGACTTTGTGAGATCCAGACTTGAAGTCACT
GATGACCTTGAGAAAGTTTGCAATGAAGTAGTCGACACCTGCTTGTATAAGGGAAGTCGA
GACAACATGAGTGTGATTTTGATCTGTTTTCCAAGTGCACCCAAAAGTCTCGGCAGAGGCG
GTGAAGAAGGAGGCGGAGCTGGACAAGTACCTGGAGAGCAGAGTAGAAGAAATCATAAAG
AAGCAGGTGGAAGGCGTCCCTGACTTAGTCCACGTGATGCGCACGTTAGCCAGTGAGAAC
ATCCCCAGCCTCCCACCAGGGGTGAATTGGCAAGCAAGCGGAATGTAATTGAAGCCGTT
TACAATAGACTGAACCTTACAAAAATGACGACACTGATTCTGCGTCAACCGATGATATG
TGGTAAAGCCGCTCACCAGCCGTGGACTCACCTTCGCCTGCAAAGGGGAAGCCAGCTCA
TCCTTGCCGAGCCTTTACCATCCATCACCAGCTTCACAGGAGGGTCTGACACGGGTGAGG
ACTGCAG

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FIGURE 2A

Gene Sequence Structure

*

164 bp

Sequence Deleted

326 bp

Size of full-length
cDNA: 1387 bp



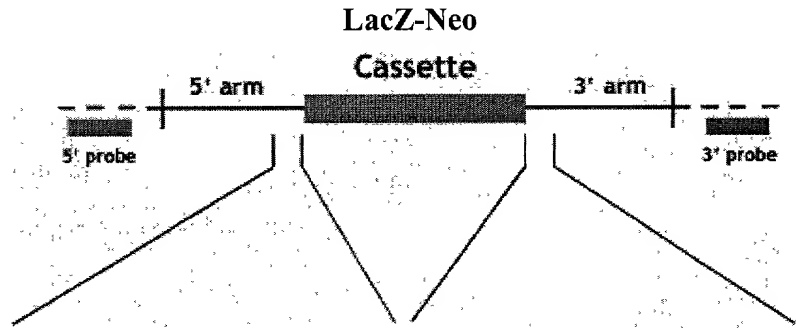
Targeting Vector* (genomic sequence)

Construct Number: 2639

Arm Length:

5': 2.5 kb

3': 4 kb



5' >GCAACACAATGCTTGTAGGTA
TAGCCTGTGAGTTTTTCCAGCTTC
CTTGTATCTTATAGATTCTGGGTA
AAGAGTGTGGACATGTTTTGTTT
CAAAGGCAATCACTTATTTTCTTA
TTTCTCTTCCTTTACAGACCTAGA
GGATCAAGTCATAATGGGAGCATT
TTTAGACAAGCCAAAGATGGAGAA
GCATAATGCCC<3' (SEQ ID
NO: 3)

5' >CTGCTGTGAGCACTTGTTAGA
TCACATCACCATAACCAGGATTT
CAGAGGATCTGCAGGAGCACCTTC
TGTGGAGAACGTAAAGAATGGAAT
CAGAACAGGGTTTCTGGAGATTGA
TGAACACATGAGAGTTATGTCAGA
GAAGAAACATGGTGCAGATAGAAG
CGGGTCAACAGCTGTGGGCGTCTT
AATCTCTCCCC<3' (SEQ ID
NO: 4)

Targeting Vector
Endogenous Locus

* Not drawn to scale

FIGURE 2B